

LISTING OF THE CLAIMS

1. (Previously Presented) A system comprising:
configurable system logic having programmable logic;
a direct memory access (DMA) controller;
a configurable system interconnect coupled between the configurable system logic and the DMA controller; and
an input/output (I/O) device coupled to the DMA controller by way of the configurable system interconnect, wherein the I/O device is implemented in the programmable logic and the DMA controller terminates a DMA transfer and clears a current transfer counter before a terminal count is reached upon receiving an early termination request signal from the I/O device.
2. (Previously Presented) The system of claim 1 wherein the DMA controller re-executes a DMA transfer with the I/O device upon receiving a retransmit request signal from the I/O device.

Claims 3-5. (Cancelled)

6. (Previously Presented) The system of claim 1 further comprising:
a central processing unit (CPU) coupled to the system interconnect; and
a memory device coupled to the system interconnect.

Claims 7-11. (Cancelled)

12. (Previously Presented) A system comprising:
configurable system logic having programmable logic;
a direct memory access (DMA) controller;
a configurable system interconnect coupled between the configurable system logic and the DMA controller; and
an input/output (I/O) device coupled to the DMA controller, wherein the I/O

device is implemented in the programmable logic and the DMA controller re-executes a DMA transfer from the beginning with the I/O device upon receiving a retransmit request signal from the I/O device.

13. (Previously Presented) A method comprising:
- configuring a first device in programmable logic of an integrated circuit;
 - coupling the first device to a configurable system interconnect;
 - transferring data between the first device and a second device under control of a direct memory access (DMA) controller by way of the configurable system interconnect;
 - receiving a request signal at the DMA controller from the first device indicating a request by the first device to re-transmit the data between the first device and the second device;
 - transmitting an acknowledge signal from the DMA controller to the first device;
 - and
 - re-transferring the data from the beginning between the first device and the second device.

14. (Original) The method of claim 13 further comprising reloading configuration registers within the DMA controller prior to transmitting the acknowledge signal to the first device.

15. (Previously Presented) A method comprising:
- configuring a first device in programmable logic of an integrated circuit;
 - coupling the first device to a configurable system interconnect;
 - transferring data between the first device and a second device under control of a direct memory access (DMA) controller by way of the configurable system interconnect;
 - receiving a request signal at the DMA controller from the first device indicating a request by the first device to terminate the transfer of data between the first device and the second device;

erasing appropriate DMA controller information in order to restart the transfer of data between the first device and the second device;
transmitting an acknowledge signal from the DMA controller to the first device;
and
terminating the transfer of data between the first device and the second device.

16. (Previously Presented) The method of claim 15 wherein the erasing comprises, clearing a counter within the DMA controller prior to transmitting the acknowledge signal to the first device.

Claims 17-20. (Cancelled)

21. (Previously Presented) The method of claim 15 further comprising:
receiving a second request signal at the DMA controller from the first device indicating a request by the first device to re-transmit the data between the first device and the second device;
transmitting a second acknowledge signal from the DMA controller to the first device; and
re-transferring the data between the first device and the second device according to the first set of commands.

22. (Previously Presented) The method of claim 15 further comprising:
receiving a second request signal at the DMA controller from the first device indicating a request by the first device to re-transmit the data between the first device and the second device;
transmitting a second acknowledge signal from the DMA controller to the first device; and
terminating the transfer of data between the first device and the second device.

Claim 23. (Cancelled)

24. (Previously Presented) The system of claim 1 wherein the DMA controller comprises a first channel coupled to the I/O device to facilitate the transfer of data.

25. (Previously Presented) The system of claim 24 wherein the DMA controller further comprises a register, coupled to the channel, to store configuration data.

26. (Previously Presented) The system of claim 25 wherein the DMA controller further comprises error checking logic.

27. (Previously Amended) The system of claim 24 wherein the channel comprises control logic to control the transfer process within the first channel.

Claim 28. (Cancelled)

29. (Previously Presented) The system of claim 12 wherein the DMA controller comprises a first channel coupled to the I/O device to facilitate data transfers.

30. (Previously Presented) The system of claim 29 wherein the DMA controller further comprises a register, coupled to the channel, to store configuration data.

31. (Previously Presented) The system of claim 30 wherein the DMA controller further comprises error checking logic.

32. (Previously Presented) The system of claim 29 wherein the channel comprises control logic to control the transfer of data.